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NOVA SCOTIA

VOLUNTARY PLANNING BOARD

PLAN FOR THE FORESTRY SECTOR

JUNE 1966

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VOLUNTARY PLANNING BOARD

PLAN FOR THE FORESTRY SECTOR

June, 1966

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The Chairman and Members
Nova Scotia Voluntary Planning Board

Gentlemen:

I have the honour to present to the chairman and members of the Nova Scotia Voluntary Planning Board the Forestry Sector Plan for the planning period 1965 to 1968.

During the period between April, 1963 and January, 1965 the segment committees and the sector committee held a total of 27 meetings before submitting its recommendations and targets to your Board for consideration. I would also like to note that we were indeed encouraged by the way in which our work was received by your Board at that time.

This present report is an all inclusive updating of those previous submissions and also includes, as I am happy to report, the implementation action that has been taken to date on our recommendations.

There has been one change in format from our previous publications. Instead of including the wildlife and recreation aspects of the sector's work in this document, we will be presenting all the papers prepared by the Fur, Fish, Game and Recreation Segment Committee as a separate monograph.

Finally, let me assure you, Mr. Chairman, and the other members of your Board, of our willingness to continue our participation in the economic planning programme, as well as our willingness to work towards achieving the targets set by your Board for our sector.

Respectfully submitted,

Hugh D. Fairn,
Chairman,
Forestry Sector Committee

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CHAPTER I

INTRODUCTION

This report is one of a series that will be published by the Nova Scotia Voluntary Planning Board for each of the sectors of the provincial economy. As such, then, it represents the plan for the forestry sector over the period 1965 to 1968.

The forestry sector includes, for the purposes of the planning programme, not only the primary, extractive phase of removing raw material from the forest, but all the primary and the major secondary manufacturing industries using this raw material. Apart from this singular use of the forest, the sector also includes the multiple use aspects of wildlife management and recreation.

The forestry sector was organized as a part of the economic planning programme at Truro on April 16, 1963. At that meeting four segment committees (Pulp and Products, Lumber and Sawn Products, Associated Forest Products and Fur, Fish, Game and Recreation) were elected and charged with the preparation of segment target plans that would include:

(1) the recent and current rate of growth,

(2) the potential for increased growth and the economic obstacles which are preventing the attainment of a faster rate of growth,

(3) a target expressed in terms of an annual rate of growth, and

(4) the policies and programmes necessary to achieve the target.

The Forestry Sector Committee was organized in November, 1963 to consider the plans of the segment committees and to formulate from these plans an overall plan for the entire sector. The sector committee presented its report, including its recommendations, to the Voluntary Planning Board in October 1964 and its quantitative targets in January, 1965.

The progress report of the Voluntary Planning Board, presented to the Nova Scotia Legislature in February, 1965, included a summary of this report and target plan as well as new material included in the Board's overall strategy for the economic development of the province.

The purpose of a further report at this time is to draw material together that was presented in three separate documents, to up-date the statistical data that were previously presented, to re-examine the quantitative targets with respect to the latest statistical information and industry plans, and to give up-to-date information on those recommendations that have been implemented to date. In this latter context, this report can be considered as a progress report on the implementation of the sector committee's proposals.

What is not attempted in this report is a complete economic analysis of the sector. If time permitted, several specific areas could be examined with the explicit purpose of isolating the problems and the obstacles to a faster rate of growth for the sector. This report concentrates on the rather broad developments within the sector framework for the period 1947 to 1964 and with projections for the first

planning period 1965 to 1968. Consistent with the remainder of the planning programme's publications, a further medium-term time period is also included with certain projections being made to the year 1972.

The report begins (Chapter II) with a historical review of the sector with particular emphasis on the structural change between industry groups during the post-war period and indicated future trends.

In Chapter III the potentials for growth of the sector and its components are outlined. In Chapter IV, the quantitative targets are given and in Chapter V, the recommendations of the sector committee are presented.

Finally, it is the intended purpose of this report to give a brief description of some of the more prominent problems pertaining to the sector, the recommendations that were passed to alleviate some of these problems, what future obstacles can be expected, and the possibilities of achieving the targets set by the Voluntary Planning Board for the sector during the First Plan Period.

CHAPTER II

REVIEW OF FORESTRY SECTOR - 1947 TO 1964

The two levels of the forestry sector, the primary or extractive phase and the manufacturing phase, are distinguished for the purpose of this review.

The Primary Extractive Phase

The extractive phase embodies the extraction of raw wood material from the province's forests, in other words, logging for a multiplicity of products including sawlogs, pulpwood, fuelwood, poles and piling, mine timbers and Christmas trees. Total production is thus the aggregation of these and other less important products. Two measures of total production are available - one from the Dominion Bureau of Statistics (DBS) and another more recent and exacting survey - the Primary Production Survey - published by the Nova Scotia Department of Lands and Forests. The former, on a calendar year basis, is available for the examination period 1947 to 1962, while the latter, on a fiscal year basis, is only available for the years 1961-62 through to 1964-65. (See Table A-1).

It is clearly evident upon examination of the DBS data that over the period total production has declined. The magnitude of the decline between 1947 and 1962 has been about 57 million cubic feet or 41 per cent. It is also evident that total production is cyclical, roughly approximating business cycle movements, even though in recent years there seems to be an increasing tendency for total production

to lag behind business cycle changes. Also, exogenous factors such as the hurricane damage in 1954 and consequent salvage operations in 1955 do affect production levels. The primary production survey data indicate an increase in total production in the mid-sixties related, probably, to both increased manufacturing capacity and the upswing in general business activity.

Sawlog and bolt production by 1962 was approximately one-half of that of the immediate post-war period. The pattern of this production generally follows the cyclical movements of total production, even though more exaggerated, with higher peaks and deeper troughs.

Total pulpwood production increased by about one-third over the period 1947 to 1962, and like sawlog production was subject to cyclical trends with peaks in 1951, 1957 and 1962, and troughs in 1949, 1953 and 1958. Because of new manufacturing capacity, a strong export market and generally buoyant business activity, pulpwood production in fiscal year 1964-65 not only surpassed any previous year's total, but also was greater than sawlog production for the first time in the history of these two competing industries in Nova Scotia. Also, this total would undoubtedly have been higher had it not been for the greatly increased use of sawmill residue by the pulp and paper industry in the province, effectively lowering its pulpwood requirements.

Of the total pulpwood production, only part is consumed by the pulping capacity in Nova Scotia.

A significant proportion of this total (see Table A-2) is exported mainly to European markets. This is a highly variable market and in itself explains a great deal of the variation throughout the period in total pulpwood production.

Fuelwood during the post-war period steadily declined to a low of about eight million cubic feet in 1958, but since then demand has surprisingly strengthened. The primary production data give further evidence to this trend reversal, indicating a more or less stable production of around 11 to 12 million cubic feet per year. However, improved quality of statistical information as a result of the latter survey may be the explanation of this phenomenon.

Other forest product production has declined steadily over the period indicating a general demand shift for the differing products represented by the group. Such a shift can be either of the technological type (for example - improved preservation techniques have extended the life of railway ties, thus reducing demand for new ones), or the decline of another industry that used a wood product in its production process (for example - the coal industry and demand for mine timbers), or a combination of both.

The general situation over the period, then, is one characterized by a declining total demand that is indicating reversal only in the mid-sixties and a definite shift in the demand patterns between the two major categories of products derived from the forest.

Data covering employment for the extractive phase of the sector are virtually non-existent.

Collection of such data is complicated by the simple fact that a logging industry as such does not exist. It is possible to obtain this information from the forest industries that employ logging personnel, but a great proportion of the total cut is done by non-grouped people such as farmers and similar part-time loggers. Recently, some information became available for the first time from the Employment and Payroll Division of DBS. These data are on a monthly basis for the years 1962 to 1965, inclusive. However, the survey system used restricts the coverage to those firms employing 15 or more people, therefore strictly limiting its usefulness as a measure of total employment.

Since some measure of employment is desirable, it was estimated on a man-year basis by relating a productivity figure to total production (Table A-3). However, such a computation should be regarded with caution as the subjectiveness of the assumptions and the accuracy of the production data reduce the employment figures to something less than a desirable statistic.

As may be expected from use of this procedure, total employment follows production, in that it is cyclical, but declines steadily throughout most of the examination period. In a magnitude comparison this means that total man-years of employment in logging fell from a level of about 4,000 in the immediate post-war period to approximately the 3,000 level or slightly less in the early sixties. Related to the primary production survey data, by the

mid-sixties this employment had increased to about 3,400. The data from the Employment and Payroll Division indicate an average yearly employment figure of 807, 810, 921 and 753, for the respective years 1962, 1963, 1964 and 1965. Needless to say these figures are, in absolute terms, too low but are given in Table A-3 on a monthly basis to indicate the seasonal variation of logging employment.

Value added by manufacture data are available from DBS for the years 1947 to 1962 (See Table A-4). These data, however, are exclusive of farm woodlot production, consequently a value added figure for this production had to be computed to arrive at a total. "Value added by manufacture" for logging throughout the period 1947 to 1962 ranged from a low of about 16.5 million dollars in 1949 to a high for the period of about 26.3 million dollars in 1951. On a value added per thousand cubic feet basis for "commercial" production, there was an increase over the period from about 150 dollars during the immediate post-war period to about 200 dollars in the early sixties. However, even though there was this apparent increase, in "real" terms the value added per thousand cubic feet situation has probably changed little over the range of the period.

It should be noted though that any comparison such as this is rather arbitrary as a result of changes in product mix, for example, changes in sawlog pulpwood production ratios that have occurred over the period in question.

The Forest Industries

Pulp and Paper Industry

There are currently three pulp mills and one pulp and paper mill operating in Nova Scotia with a total rated capacity of 1,055 tons per day. Two of the pulpmills are relatively small - 100 and 105 tons per day rated capacity - and the third is medium-large with a rated capacity of 350 tons per day. The former two are groundwood mills and the latter is a chemical-type mill. The largest mill in Nova Scotia is a fully integrated newsprint mill, using both groundwood and chemical pulp, with a rated capacity of 500 tons per day. In addition to this existing capacity, a large new chemical pulp mill, with an expected rated capacity of 500 tons per day, is under construction in the province and should be in production by late 1967.

The existing capacity has been estimated to represent a total investment (original capital plus repair and maintenance) of 120 million dollars. The capital investment in the new mill has been estimated at in excess of 50 million dollars, and that plus the value of the current expansion programme to the existing chemical capacity in the province, brings the total to about 175 million dollars.

Employment in terms of average number employed (See Table A-5) increased steadily, if slowly, over the period 1947 to 1961. Then with the start of production of the new chemical capacity in 1962, employment increased by about 500. The monthly data, even though on a slightly different statistical base, indicate additional employment increases in 1964,

carrying through most of 1965, of about 100. Undoubtedly, the movement in these two years is linked to increased production to fulfill an increasing demand for pulp and pulp products.

Value added by manufacture (See Table A-6) grew steadily over the period, with again a sharp increase in 1963, when the new mill came into full production. It is believed that when the 1964 figures are available another sharp increase can be expected as there were two labour strikes in 1963 that seriously affected the province's industry. In absolute terms value added by manufacture increased by about 4 million dollars between the immediate post-war period and the early sixties. This was approximately a gain of 57 per cent. Discounting some of this as inflationary, the actual or "real" gain over the period was still fairly significant. As mentioned before, there was an increase in 1962 amounting to about two million dollars, and a sharp increase in 1963 of about three million dollars over the 1962 figure. Therefore, the growth rate of the industry over the entire period was quite significant.

Value added by manufacture per employee (See Table A-6) is a measure of the productivity of the industry and indirectly of the labour force employed in the industry. These data indicate that productivity increased rapidly throughout the immediate post-war period and on into the early fifties. Through the remainder of the fifties and until 1962 when a dip occurred, productivity remained at a fairly stable level. Then in 1963, with the new capacity in full

production, value added per employee increased sharply, though barely exceeding the previous high achieved in 1953. Relating the province's situation to that of the Canadian average for the years 1962 and 1963, some conception of the efficiency of the provincial industry can be gained. Value added per employee in Nova Scotia for those two years was 7,930 dollars and 10,755 dollars, respectively, whereas the average for the Canadian industry as a whole was 13,620 dollars and 14,057 dollars, respectively. It is expected, however, that this gap will be closed when the new pulping capacity in the province comes into full production.

In summary, then, the province's pulp and paper industry has emerged in the early sixties from a period of rather modest growth into an era of rapid expansion. Good gains have been experienced in employment and value added by manufacture. Productivity of capital and labour is lagging behind that of Canada as a whole, but this is expected to improve rapidly during the remainder of the decade as new pulping capacity and expansion programmes to existing capacity are completed and in production.

The Sawmilling Industry

Data covering the number of sawmills and lumber production are available from two sources for Nova Scotia - DBS and the Nova Scotia Department of Lands and Forests. The latter information is thought more complete and reliable, especially in the latest years, than that supplied by DBS, but both are given in Table A-7 for comparison purposes.

From a high of 808 sawmills operating in 1956[1], the number of sawmills has been declining each year reaching 441 in 1964. It had been thought in earlier examinations of this industry that this declining number of mills was indicative of a changing structure within the industry, that is a move to fewer but larger mills which would be in a better position to produce a variety of products including pulp chips from slabs and edgings. It is possible to separate the department data into production size groups. (See Table A-8). On the basis of number of mills, these figures indicate that the dropout has been throughout the range of production size groups, and even though some shifting has taken place, no conclusion can be drawn regarding internal structural change. Data showing production by mill size group as a per cent of total production for the years 1961 to 1964 do, however, indicate some shift upwards. But the period covered by these data is too short for any conclusive statement about shifting production totals by production class.

Lumber production by the DBS survey, even though cyclical with highs in 1952, 1955 and 1960, and lows in 1949, 1954, 1958 and 1961, has been declining steadily over the period 1947 to 1962. By the department survey, lumber production figures

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[1]Data prior to 1955 includes some double counting according to Nova Scotia Department of Lands and Forests officials and therefore is excluded from the examination.

fairly well followed those of the DBS survey up until 1959, when the two surveys' totals began to diverge quite rapidly. Again assuming the department figures to be the better of the two, total lumber production appears to be stabilizing at or around 225 million board feet. Here again, though, statistical evidence is not available for enough years to be certain of this conclusion.

Employment[1] and value added by manufacture information is only available from DBS and have been adjusted to the same total activity base for the period (See Table A-9).

Employment over the period declined more or less constantly in the industry, particularly during the middle fifties and early sixties, associated with the high rate of sawmill number decline. In absolute terms the decline was from 2,567 in 1947 to 1,307 in 1963 (48 per cent) even though in 1961 employment was at the lowest level of 1,174 for the period.

Value added by manufacture in the sawmilling industry (See Table A-9) followed the pattern of employment, dropping during the late fifties and

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[1]Employment figures for the sawmilling industry are misleading as these are average number employed on a yearly basis which fails to recognize the high seasonality of the industry. For example, monthly data collected by the Employment and Payroll Division varied from a low of 558 to a high of 933 in 1962, which is not indicative of the complete variation. The survey is restricted to those sawmills employing 15 or more people thus excluding the smaller sawmills, which are more seasonal in their operation.

giving some indication of recovery in 1962. From a 1947 total of about 7.2 million dollars a high for the period was attained in 1955 of about 8.1 million dollars falling to about 4.9 million dollars in 1961, and increasing again in 1962 to approximately 6.3 million dollars.

Declining number of sawmills, lumber production, employment and value added by manufacture relate to a constricting sawmilling industry in Nova Scotia. The industry in the early sixties seems to have reversed at least some of these statistical measures, but more up-to-date information is required before this trend can be confirmed.

One statistical indicator of this trend towards improved efficiency in the sawmilling industry is the measure of value added by manufacture per employee (See Table A-9). On an index basis using 1947 as a base year, capital and labour productivity increased to a high attained in 1955, dropped off during the remainder of the fifties, and is indicating a strong improvement in the sixties.

The Other Wood-Using Industries

The other wood-using industrial group includes sash, door and planing mills, wooden box factories, cooperage plants, speciality wood product industries such as coffins and morticians' supplies, shoe trees, lasts and findings, wooden handles and turnings, wooden ware and excelsior; and miscellaneous wood-using industries such as preservation plants, etc. Other wood-using industries such as boat building and furniture are included as part of the secondary

manufacturing sector. The decision of whether a particular industry "belonged" in the forestry or the secondary manufacturing sector was based on the availability of statistical information. In the case of the last two mentioned industries, for example, it was not possible to break statistical data out of a larger group in which they were included.

Another difficulty in attempting to proportion industry groups is that of separating the secondary manufacturing aspects from the sawmilling industry. For example, DBS includes only those firms producing completed wooden boxes or crates as a major part of their total production in the wooden box industry category, those producing box shooks as their major production are included in the sawmilling industry. Therefore, some overlapping occurs between the sawmilling and wooden box industries.

Number of establishments and employment (See Table A-10) have both contracted in the other wood-using industries group over the period. Number of establishments dropped from a high of 120 attained in 1949 to a low of 77 in 1959. The total decline from 109 in 1947 to 81 in 1962, or 27, amounts to a 25 per cent decline for the complete range of the examination period. The employment high for the period of 1,570 was reached in 1952, and the low at the end of the period of 940 in 1962. In this comparison it is difficult to relate number of establishments with employment because of the industry mix involved and particularly the relative size of the establishments.

Value added by manufacture, (See Table A-10)

increased rather significantly in percentage terms, over the period. In absolute terms during the immediate post-war period value added was about two million dollars, increasing to about 3.3 million dollars in the early fifties, reaching a high of 4.8 million dollars in 1958, and dropping again to 3.7 million dollars in 1962. The high reached in 1958 is surprising in that during that year the other forest industries followed the decline in business activity, while apparently the other wood-using group improved their position against the trend.

The group as a whole will experience a boost in the sixties with the building and coming into operation of an 8.5 million dollar hardboard mill in the province. The impact of this one industry should increase the group's employment and value added by about 20 to 25 per cent when production starts.

CHAPTER III

POTENTIALS FOR GROWTH

Assessment of the future outlook for the forest-based industries is complicated by the lack of reliable information about the extent and nature of the resource from which raw material is drawn. Associated with, and perhaps overriding this problem is another - resource control - the implications of which only the affected industry or individual mill operator has yet to assess.

The latest province-wide forest inventory was completed and published in 1958, and even though the validity of the inventory and particularly the allowable cut determination method have been challenged, it remains today the only guideline to the potential for future industry growth. Based on these resource statements, little industry growth could have been predicted in the late fifties if the resource base were to be sustained.

In 1964, as a result of negotiations with a pulp and paper company wishing to locate a mill in Nova Scotia, the allowable annual cut for softwood pulpwood was re-examined by Nova Scotia Department of Lands and Forests officials. As a result of their calculations, the allowable annual cut was increased substantially from 1,375 thousand rough cords to 2,400 thousand rough cords - an increase of 1,025 thousand, or about 74 per cent.

The magnitude of the increase by the recalculation of the basic data from the inventory stresses

the uncertainty of the knowledge about the capacity of the province's forest resource, and enhances the need for the data from the new forest inventory started in 1964.

Control of the resource is particularly important to the sawmilling industry. From an era of almost complete raw material market control at the beginning of the twentieth century, that industry is faced in the sixties with constantly restricted access to timber supplies. This feature alone may be a more important determinant of its future than market potential for its products throughout the remainder of the decade.

In the sixties, this particular problem has at least been recognized, if not adequately explored, and with the formation and operation of the Nova Scotia Timber Loan Board, the sawmill operator has an opportunity to expand his timber resources. Successful expansion of timber reserves through ownership and successful competition for timber from non-aligned sources may be the deciding difference between growth and further constriction for the sawmilling industry during the first and into the second planning periods.

A problem in relation to the resource far more acute than better information and the supply problem of a particular industry is the one concerning owners of small holdings of forest land in Nova Scotia. Nova Scotia has a unique (by Canadian standards) ownership situation, where some 77 per cent of the total productive forest land of the province is under private control. Of the approximate 7.4 million

acres in this category, fully 85 per cent are contained within ownerships of less than 1,000 acres, and of this, about 4.5 million acres are in the ownerships of less than 200 acres. This last group forms the greatest single source of timber supply for the province's forest industries.

The owners of these properties rely on these woodlands for a portion, and sometimes a major portion of their annual income. The resultant action is an apparent over-cutting problem and a general deterioration of the timber stocking on these lands. Also, the problem cannot help but increase with increasing demand for raw material by expanding provincial forest industries. Regardless of laws passed to prevent the cutting of immature timber, if sources of income other than that derived from the sale of timber are not available for these owners, further deterioration of these lands will certainly take place.

Forest land control and use is a far more complex situation leading to further complexities than have been cited above. The point in making these observations is that an assessment of the ability of Nova Scotia's forest lands to supply the needed raw material is in itself not enough. Supply in relation to ownership and determination of the complexities that this combination gives rise to, is by far the most important factor affecting the growth potential of the forest industries in Nova Scotia.

The provincial pulp and paper industry, as previously outlined, is currently going through a period of rapid expansion of boom proportions as is

the industry in Canada as a whole. Projections by a host of reliable sources indicate fairly rapid increases in world demand for the industry's products throughout the medium time period to 1975, and on to at least the end of the twentieth century. Nova Scotia's industry, with its proximity to the large markets of Northeastern United States and Europe should have little difficulty marketing its products throughout this period. Undoubtedly, there will be problems associated with production levels as business cycle movements swing upward and downward, but generally the outlook is favourable.

The only negative possibility that is remotely apparent relates to the groundwood pulping capacity in the province. There is currently and has been for some time, overcapacity in world groundwood pulp plant. Even though some of Nova Scotia's groundwood pulp production is destined to a captive market, any downward swing in business activity or a trend to greater cost inflation could be decisive in the operation of at least some of this capacity. Even though it is unlikely that there will be a reduction in groundwood pulping capacity during the first planning period, at some time in the not too distant future some combination of adverse events will threaten the continuation of production.

The main challenge to the industry during the first planning period will be to improve productivity. It has already been pointed out that provincial pulp and paper industry productivity lags behind the Canadian average. Improvements are expected with

the coming into production of the new capacity, but there is still a need for improving the productivity of existing capacity through capital investment.

The general market outlook for Canadian lumber is also bright to the medium term of 1975, according to expert opinion. Up until about 10 years ago, the main market for Nova Scotia's lumber was Great Britain, and even though this market diminished during the late fifties, a building boom there in the early sixties carried provincial lumber exports to about 50 per cent of the total production. At present, with serious balance of payments problems and generally an unfavourable rate of economic growth in Great Britain there is some doubt that demand for Nova Scotia lumber will remain at these levels. Another important determinant of growth in Nova Scotia's sawmilling industry, then, is whether other markets can be obtained to keep lumber production levels up if Great Britain's demand diminishes during the remainder of the first planning period.

Aside from improving its raw material supply situation and seeking out new markets for its products, the provincial sawmilling industry must alter its structure if it is to remain as a competitive force in Nova Scotia's economy. Improvements must be made to sawmills to improve their efficiency in an era of spiralling costs, including taxes. This means the development of sawmills to utilize small logs and the recovery of salvage material for the manufacture of pulp chips.

The outlook for the existing other wood-

using industries is not optimistic. Here the problem is not so much one of raw material but one of rising costs of production and competing products in traditional markets. While there are some industries in this category that should continue to remain viable by the speciality nature of the product produced, others will ultimately disappear.

The education and full utilization of the labour force is a barrier to growth that must be examined as a part of the planning programme. As in the other resource-based sectors, the trend in the forestry sector is generally one of substitution of capital for labour. Currently, the labour force employed in logging, sawmilling and the other wood-using industries, for the most part, is inadequately trained and unable to handle efficiently the newly developed machinery and equipment. The historic seasonality of these types of operations and the lack of technical training facilities has also been detrimental to the development of a competent work force. It is of paramount importance that the possibility of upgrading this labour force, including managerial skills, be considered to increase the economic efficiency of these operations. In connection with this, it is encouraging that a joint Nova Scotia Department of Education and Department of Labour woods labour training programme has been set up. The main purpose of this programme is to give additional training to existing personnel and initial training to those wishing to enter that labour force.

Increased productivity in logging is yet

another aspect of the same problem that must be investigated in depth. The productivity of labour force engaged in logging operations can be increased by further mechanization, but the degree of mechanization in Nova Scotia is limited by terrain and by the ownership pattern. A combination effort of better labour force training, employment of logging equipment suitable to logging conditions and the possibilities of combining woodlands into larger units must be explored if Nova Scotia's forest-based industries are to remain competitive with other wood products' producing areas in common markets.

Beyond all this, it appears that it will be necessary to place our main planning emphasis on forest management and further utilization of all the province's tree species. As greater demands are exerted on the resource, and as raw material values rise, it will become increasingly important actually to initiate forest management programmes rather than merely to talk about them or pay token attention to management principles on a minor scale.

CHAPTER IV

SECTOR TARGETS - 1965 TO 1968

The Voluntary Planning Board has selected from several sets of projections given to it by the Forestry Sector Committee a particular set[1] which is to be regarded as the sector targets for the First Plan period (1965 to 1968). These targets are as follows:

A. Value Added by Manufacture	1968 Target $ Current	± % Change Over 1963/ 1964 Base
Pulp and Paper Industry	32,000,000	+ 72.4
Sawmilling Industry	6,500,000	+ 8.3
Other Wood-Using Industries	5,100,000	+ 32.4
Logging	20,800,000	+ 55.8
Totals	64,400,000	+ 37.7

B. Employment	Average Number Employed	± % Change Over 1963/ 1964 Base
Pulp and Paper Industry	2,300	+ 42.3
Sawmilling Industry	1,120	- 10.4
Other Wood-Using Industries	1,000	+ 11.1
Totals, Forest Industries	4,420	+ 17.4
	Man-Years Employment	
Logging	3,200	+ 12.3

Note: Complete data are given in Tables A-11 and A-12.

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[1] These targets vary somewhat from those as published in the "Report on Progress, Overall Plan, Nova Scotia to 1968", published in 1965 by the Nova Scotia Voluntary Planning Board. The current targets generally concur with the same set of assumptions used in the derivation of the previous ones, but have been up-dated to include the latest statistical information and to include announced industry expansion programmes.

The value added by manufacture target for the pulp and paper industry should be easily attained by that industry during the planning period. The target reflects the coming into production of the new chemical capacity and the increased capacity of the existing chemical-type mill. The target further assumes a high production to rated capacity ratio for the entire provincial industry, as well as an improved capital and employee productivity relationship. Employment projections are in line with industry disclosures about the extent of new employment within the industry. The only factor which both the value added and employment targets do not reflect is the possibility of some curtailment of groundwood pulping capacity. As mentioned before the likelihood of any such development occurring during the first planning period is remote, but it should be given some consideration in relation to the 1972 target given in Table A-11.

Implicit in the value added by manufacture target for the sawmilling industry is improvement in its raw material supply situation. This means both increased timber holdings for the operation of individual mills and successful competition for timber supplies from small ownerships. Other considerations basic to the target are improved efficiency (that is, productivity) of sawmill operations, continued high recovery of pulp chips from sawmill residue, and continued high market demand for sawmill products. Any negative change in these factors during the planning period could, of course, lower the actual value added

attained to a figure less than the given target.

The declining labour force requirement by the sawmilling industry is indicative of the expected continued dropout in the number of mills operating, which should continue even though at a predicted slower rate, and increased substitution of capital for labour. In this latter connotation, efficiency in the industry is a criterion for growth, and this efficiency must be gained by implementing new technical innovations in the existing industry's mills as well as in those new ones that come into operation during the planning period.

The target for the other wood-using industry group has been revised upwards with the announcement of a new hardboard mill currently under construction in the province. Both employment and value added by manufacture for those industries other than the above should continue to decline during the planning period. Such features as small plant size, outdated products and competition from other industries for markets supplied by this group will continue to be a negative factor to growth.

Logging reflects forest-based industry activity and substantial gains are expected in total production and therefore "value added by manufacture". The two major product categories of raw material demand are sawlogs and pulpwood. Sawlog production during the early sixties ranged from about 190 to 210 million board feet. By 1968, this production is expected to have declined slightly to between 175 to

200 million board feet, provided, of course, the industry assumptions are met. Pulpwood production, on the other hand, is expected to increase from the 1964-65 level of about 560 thousand rough cords to about 875 thousand rough cords in 1968. It is further assumed that export pulpwood will decline from the level of about 100 thousand peeled cords attained in 1963 to about 50 thousand cords in 1968. The reasoning behind this latter assumption is that the export pulpwood market is cyclical and currently there appears to be a downswing in that market.

In the case of man-years of employment in logging, there are several assumptions that lie behind the target. Throughout the period there will be sharp increases in primary production to supply the new chemical pulp capacity and the hardboard mill. As a result of this increase in demand, logging employment should also increase. However, during the same period productivity increases must be made from the current average of one and one-half cords of pulpwood per day or one thousand board feet of sawlogs per day. Therefore, the increasing productivity assumption which is built in tends to discount what would normally be expected in increased employment with increased production. In fact, it is estimated that by 1972, the total man-years of employment in logging will again be down around the 2,600 level as productivity increases will tend to outpace production increases.

CHAPTER V

RECOMMENDATIONS

The following recommendations are those that were submitted by the Forestry Sector Committee to the Voluntary Planning Board. Included in this listing are only those which pertain to the singular use of the forest for wood products and the industries which utilize these wood products. Those pertaining to the multiple use of the forest will be included as a part of the monograph on that subject.

The included recommendations in this report are broken down into two categories: (1) those as approved by the Board and as included in the Board's "First Plan for Economic Development to 1968", and (2) those which were submitted to the Board, but which were rejected by that group.

Following each approved recommendation will be a statement on its status to date, that is the progress that is being made in the implementation of that recommendation.

Recommendation Number I
Forest Inventory

WHEREAS:

1. Before presenting an overall target plan to the Nova Scotia Voluntary Planning Board it is important that sufficient information about the forests of Nova Scotia be available so that the government and the forest industries will be in a position to make policy and operational decisions.

2. Complete utilization of the productive capacity of the forests of Nova Scotia, without overcutting in any district, is highly desirable.

3. It is of prime importance for the future economic welfare of the province for the existing forest industries to be assured that the forest resources will meet their present and future demand.

4. There is still considerable uncertainty regarding the productive capacity of the forests.

5. There is overcutting in some districts and undercutting in others.

BE IT RESOLVED THAT:

1. The Department of Lands and Forests of Nova Scotia, with the co-operation of the Department of Forestry of Canada, inventory the forests of the province to provide a reliable estimate of the volume of sawtimber, pulpwood and other products available now and for continuous maximum production.

2. This inventory be based on new air photography and both be started in 1964 and completed by 1966, and prints of the photos be made available for purchase.

3. The most modern and efficient photo interpretation techniques be used, with adequate forest sampling.

4. The Canada Department of Forestry be requested to test immediately the validity of the yield tables developed by the Nova Scotia Department of Lands and Forests, which have been designed to be used for projecting yields and for estimating allowable cuts.

5. The Nova Scotia Department of Lands and Forests also institute a system of forest inventory which will be continuous, that is, that a certain area of the province be completed each year and that the first cycle be completed in seven years.

6. The initial inventory and forest yield report include statements of present and anticipated merchantable volumes by species and utilization classes.

7. The Nova Scotia Department of Lands and Forests maintain a record by counties, of the annual cut, including a statement of the total cut of all products in cords per acre of productive forest land in each county.

Recommendation Status

As a result of industry demand the Nova Scotia Department of Lands and Forests started a new forest inventory in 1964. There are two significant features of the new inventory system that differ from the previous one. They are: (1) the new system is designed to be continuous in that once the province's forests have been completely inventoried, the process

will start all over again, and (2) the actual inventory work is being done by department personnel with some outside consultant help whereas the previous inventory was done completely by consultants.

In reference to (1) above, each of the seven inventory sub-divisions that were used in the previous inventory will be utilized in the new one. The department plan is to complete all the phases of the inventory for any one sub-division in three years and publish a separate report upon its completion. A final report will also be published when the entire province is finished. Even though each sub-division is expected to take three years to complete, the system is such that the complete forest inventory for the whole province should take only eight years. It is estimated that the report on the first sub-division (Antigonish) will be completed by the end of 1966 and final report will be completed by 1972. Further and more exact details about the inventory can be obtained from a paper by R.M. Bulmer, entitled "Nova Scotia Provincial Forest Inventory Progress and Future Plans", available from the Truro office of the Department of Lands and Forests.

Some initial work has been started by the Canada Department of Forestry on forest yield projections in Nova Scotia. During the summer of 1965 some field plots were located in the province by that department's personnel, and initial measurements were made. It is expected that this work will be continued and possibly broadened during the summer of 1966.

The Department of Lands and Forests is

currently attempting to adjust its Primary Production Survey in such a way that forest production can be given on a county basis as well as by ownership class. Some problems still have to be solved, but it is expected that these data can be published by fiscal year 1965-66.

Recommendation Number II
Cutting Practices and Forest Management

Introduction

Poor cutting practices in Nova Scotia have resulted in the transition of extensive forest areas to areas of inferior growth of low commercial value. Accelerated depletion is now rapidly increasing the acreage of such inferior growth and the productivity of many forest areas is deteriorating.

It is recognized that public welfare requires the protection, maintenance and rehabilitation of the forests and of the productivity of forest land to:

1. provide continuous and increasing supplies of forest products, thereby maintaining forest industries and providing continued employment for farmers and other workers;
2. conserve water and prevent or reduce floods;
3. improve conditions for wild life, recreation and scenic values.

The ownership of forest lands entails an obligation of responsibility for keeping the land productive and from becoming a public nuisance. However, forest owners should not be penalized nor burdened

disproportionately to the owners of other forms of essential property and productive enterprises in protecting the public interest.

It has been proven in the older countries that education alone does not suffice to prevent extensive forest devastation. In most cases of private ownership, some government regulation of forest operations is essential for maintenance of forest productivity. This maintenance can be achieved in most types of forest through practical management and cutting methods. However, some governmental aid is required to compensate owners for maintaining non-revenue values.

Proposed Legislation

Forest cutting practice legislation should be of a minimal nature only, designed to maintain productivity of forest lands. To attain this objective, the legislation must provide for maintenance of growing stock or for reasonably prompt establishment of at least minimum adequate regeneration of desirable species on cut-over areas.

The Act recommended for this purpose is outlined as follows:

A. Policy - There should be a statement of policy and purposes.

B. Regulation and Cutting Practice Rules - There should be a statement that, in all commercial forest operations, cutting and logging must be done in such a manner as to maintain growing stock or to provide, within five years, satisfactory regeneration of species of value equal to, or better than, that of those

species removed in cutting or of those species of regeneration established prior to clear cutting. Regeneration shall be deemed to be satisfactory if there is a minimum of 500 well-spaced seedlings per acre, of species as described above, six inches tall or taller. (This means at least one seedling per milacre, or thousandth of an acre, on 500 milacres on each acre.)

Local cutting practice rules should be developed by a local board for each forest district. Where such legislation has proved successful elsewhere, these boards are generally comprised of representatives of the state, of the forest owners and operators, and often of the general public. Practices proposed by the board are submitted for discussion and revision at local public hearings. Following local approval, the practice specifications or rules are subject to approval by the state forester or other legislative body. In Nova Scotia, this approval would be by the Minister of Lands and Forests. The rules are, of course, open to approved revisions.

There should be no cutting in young or immature stands of spruce, pine or hemlock except in rational thinning.

There would, of course, be provision for salvage of trees damaged by insect infestations, disease, storms and fire. Also, it is realized that satisfactory regeneration is not economically possible in some forest types. Clear cutting should be permitted in such types.

C. Administration - Administration of this Act should

be the responsibility of the Department of Lands and Forests. There should be a forest practice board for each forest district and the provincial district forester should be the secretary and executive of the Board. The other board members should be a representative of each of the following:

a. Farm woodlot owners - appointed by the Nova Scotia Federation of Agriculture.

b. Industrial owners of over 1,000 acres - appointed by the Nova Scotia Forest Products Association.

c. Other woodlot owners - appointed by the Nova Scotia Forest Products Association.

d. The general public - appointed by the municipality (ties) encompassed by the forest district.

Excepting the secretary, these should serve for terms of three years without pay.

When the local cutting practice rules for all forest districts have been developed by the local boards, approved by the Minister of Lands and Forests, and established as law, there should be a booklet published containing the rules, regulations and recommendations. This booklet should be published by the Department of Lands and Forests and distributed to forest owners and operators. The booklet should include detailed descriptions of forest types and conditions and the cutting and logging methods recommended, and the methods permissible for each type and condition.

The provincial district foresters and their staffs should be available to provide advice and

cutting prescriptions and to inspect operations. A signed prescription should be given upon application for such prescription from any owner desirous of carrying out a commercial forest operation.

In cases of infractions of the prescribed cutting method, the district foresters should report such action to the board. The board should review the complaint and express judgment.

D. Enforcement - To provide enforcement of the Act, Sections 3, 4, 5, 7, 9 and 10 of the Forests Improvement Act should be included in this proposed Act. Section 2 of the Forests Improvement Act should be revised so that a "commercial forest operation" shall be defined as one where any wood product of the forest is cut for sale except fuelwood and Christmas trees. Section 8 of the same Act should be revised to specify cutting report forms and times of reports, buyers' license forms, terms and conditions, and fees. This revised Section 8 should then be included in this proposed Act.

E. Violations and Penalties - There should be no penalty for regeneration failure on areas cut in accordance with signed prescriptions by authorized Department of Lands and Forests personnel. Otherwise, penalties should be limited to the cost of reparations.

For each acre cut in violation of cutting practice rules or prescriptions, the owner should be required to post a bond of $25.00. If natural reproduction fails, after five years following cutting, the bond should be forfeited and used by the

Department of Lands and Forests to replant the area. Should the area be partially restocked by natural regeneration within the five-year period and the planting cost less than the bond posted, the balance should be refunded to the owner.

The Act should provide for injunction, by the Department of Lands and Forests, on cutting if devastation is taking place.

F. Appeals - There should be provision for appeal by owners in case of disagreement.

Government Aid

The nation, the province and the municipalities will benefit from this improvement in forest management through continuous forest production, water conservation and maintenance of aesthetic values. Therefore, each should share in this co-operative endeavor.

The province should aid by expanding its forest nurseries and providing planting stock free except balsam fir and scotch pine, for planting areas other than those cut in violation of this proposed legislation. The province should also provide limited subsidies, under proper examination for need, for woodlot road construction.

As long as forests are taxed on a liquidation basis, liquidation will continue to occur. Therefore, the municipal property tax legislation must be revised to permit long-term forest management if there is to be cutting practice legislation.

Conclusion

The legislation and governmental aids

proposed herein would operate as a preventive of forest devastation without overburdening forest owners nor costing government more than the value of benefits derived by the public. Nova Scotia should profit from the experience of the older countries and enact legislation as outlined, or something similar, to prevent further deterioration of its forests.

Recommendation Status

The Nova Scotia Legislature during its 1965 session passed "An Act Respecting the Improvement, Management and Conservation of Forest Resources" (Chapter 7, Statutes of Nova Scotia, 1965), to be known as the Forest Improvement Act. This Act embodies most of the policies contained in this recommendation. The Act calls for the registration of both cutters and buyers of forest products over specified minimum amounts, the formation of district cutting practice boards and the specific responsibilities of these boards, the restricted cutting of immature trees of certain species, a provision for "green belts" along provincial highways and certain designated rivers, a provision for the setting up of a Timber Loan Board and the repeal of the Small Tree Conservation Act.

To date only certain sections of this Act have been proclaimed, namely registration of cutters and buyers, the formation of forest practice boards, the section authorizing the Minister of Lands and Forests to make regulations pertaining to the records and the forms buyers and sellers of wood products must maintain, the penalties involved in failure to comply

with the Act, the right to appeal, the establishment of the Timber Loan Board, and the repeal of the Small Tree Conservation Act.

Also to date, only one forest practice board has been set up in the province, that is the board for the district of the County of Colchester. Since its formation the Colchester Board has held four public meetings to acquaint buyers and sellers of forest products with the Forest Improvement Act, with itself and what it hopes to accomplish, and to enlist the support of these people in helping to implement the policies outlined in the Act.

Recommendation Number III
Sawmill Residue Study

In the late 1950's when pulp chips from sawmill residue were first produced, there was a great step forward in stabilizing the lumber industry as well as generally aiding the forest-based economy of Nova Scotia. From this time, production has increased to a level of 65,000 cords in 1963. Greater production has been hampered by the lack of financial incentive for the production of these chips.

One pulp and paper company in the province can only utilize a certain percentage of their wood requirements in the form of chips - the pulping process being the limiting factor. However, with the establishment of a new mill in the Strait of Canso area - a chemical process-type mill - total wood requirements could possibly be satisfied in the form of chips.

With the total lumber production in Nova Scotia at the approximate level of 250,000,000 board feet (1963), and using the rule-of-thumb of three-quarters of a cord of pulp chips to 1,000 board feet of lumber produced, then pulp chips in excess of 175,000 cords could have been made available to the pulp and paper industry - disregarding other affecting variables. If this residue had been utilized in total, the value to the lumber industry could have been approximately 2.5 million dollars.

It is the opinion of those in the lumber industry that if a greater portion of sawmill residue were utilized by the province's pulp and paper industry - or if external markets were established - the drain on the province's forest resource would be considerably lessened and it could mean expansion of existing industry and/or additional new industry.

For example, 175 thousand cords of pulp chips represents the growth on one million acres of forest land in one year, when taking the rate of growth at one-sixth of a cord per acre per year. Or this amount represents the clear cutting of an area greater than ten thousand acres (assuming an average cords per acre figure for the province).

Considering the above facts, which already indicate that greater utilization should be made of sawmill residue for the benefit of the lumber industry, the pulp and paper industry and the province's forest resource, it is strongly recommended that a study be carried out to determine all the factors involved.

Recommendation Status

A request was made by the Nova Scotia Department of Lands and Forests to the Forest Products Research Branch of the Canada Department of Forestry in mid-1964 to prepare a study in line with this recommendation. The study proposal put forth by the Department of Lands and Forests included three specific parts: (1) An assessment of the total potential sawmill residue that could be made available to the pulp and paper industry, (2) An analysis of the total cost of delivery of these pulp chips to pulp mill sites, and (3) The price pulp mills could reasonably be expected to pay for pulp chips landed at their mill sites. Forests Products Research Branch officials declined to consider the number (3) point in the study programme.

In September, 1964 the Branch made a report to the Department of Lands and Forests, covering these two points and others, which is available upon request from the Voluntary Economic Planning Division of the Nova Scotia Department of Finance and Economics.

Recommendation Number IV
Forest Taxation Study

The Nova Scotia Voluntary Planning Board should appoint a committee to study municipal forest taxation with a view of preparing a new or improved system and that the committee appointed should report to the Board within a period of nine months from its appointment. Further, that the composition of the committee should include representation from the Union

of Nova Scotia Municipalities, the Department of Lands and Forests, the Department of Municipal Affairs, the Nova Scotia Association of Assessing Officers, the Nova Scotia Forest Products Association and the Nova Scotia Section of the Canadian Institute of Forestry.

Recommendation Status

The Voluntary Planning Board appointed a Municipal Forest Taxation Committee in April, 1964, composed of representatives of those agencies mentioned in the recommendation and a representative from a forest industry in Nova Scotia.

The committee held five meetings between that date and August, 1965, at which time it was decided to test two taxation systems (yield tax - property tax as applied to forest inventory type strata) through application in the Municipality of East Hants. A consultant was hired and assigned to this study. He completed his assessment of the two taxation methods during December, 1965. Since that time no further action has been taken by the committee.

Recommendation Number V

Transportation of Forest Products Inquiry

1. Mapping the transport volume:

It is suggested that an overall map be prepared showing the transportation of forest products and other products, if possible. This map should schematically show tons per year moved over the different roads. With such a map it would be possible to see on what roads the biggest yearly tonnage is being transported - the roads which naturally should

be given the greatest attention.

It is the feeling of the committee that more emphasis should be given to the transportation of goods - in contrast to the transportation of people which appears to have been given preference in the past.

The schematical map will naturally feature bridges and their carrying capacities.

2. Railroads:

The committee suggests that a special study be made covering rail transportation rates for forest products. It is common knowledge that the forest industries in this province, as well as in Eastern Canada, are in an extremely bad position as compared to competitors in the United States.

3. Taxes:

In this field as in others, taxes play an extremely important role. It is recommended that a study be made of the amount of taxes paid by the forest industries in connection with transportation - directly or indirectly. In this connection, vehicle tax, fuel tax - gasoline and diesel - should be removed or reduced as applied to vehicles operated on private roads. The forest industries are naturally interested in seeing that taxes paid out by the forest industries for transportation of forest products are invested in those roads used for such transportation and from which the revenue is indirectly obtained.

4. Equipment:

Another problem which should be studied under this heading is the choice of vehicles for the

movement of forest products. Inefficient equipment is costing the forest industries of this province a considerable amount of money.

5. Access Roads:

The investment in access roads to the forest resources can undoubtedly be considered the most profitable investment in the effort to economize transportation of wood products. It is therefore suggested that possibilities of forming road associations be studied. These associations should operate, with Government support, road projects that are of mutual benefit to several woodlot owners in an area previously inaccessible. A separate association should be formed for each individual road project. In this connection it is understood that the individual woodlot owner participates financially in accordance with the benefit he will derive from the road project.

Other fields to be investigated are:

A. The Government's policy in respect to the so-called "listed roads" which have been abandoned in the past but are now being brought into use as a result of the increased demand for forest products.

B. An increased use of the Federal Roads to Resources plan for improving forest communications.

Recommendation Status

A sub-committee of the Forestry Sector Committee was set up to draw up a detailed study plan pertaining to all aspects of transportation and how transportation affects the province's forest industries. The committee limited its inquiry to transportation other than in-woods transportation, which

was thought too complex to handle. A broad outline was drawn up by this sub-committee and submitted to the Forestry Sector Committee, but no further action was taken in light of subsequent developments.

During the late summer of 1965, the Atlantic Development Board in cooperation with the Canada Department of Transport commissioned a study into all phases of the intra-provincial, inter-provincial movement and export movement of goods in and from the Atlantic Provinces. As outlined in the study prospectus, all aspects of the movement of goods will come under scrutiny of the agencies commissioned to do the study.

As a result of this study going on it was decided by the executive of the Forestry Sector Committee to postpone any further inquiry until the Atlantic Provinces study is completed.

Recommendation Number VI
National Parks

The lumber industry views with alarm the substantial areas of forest lands in Nova Scotia now taken, or about to be taken over, for National Parks. With this in mind we suggest and recommend that influence be exerted on federal authorities to make stumpage available to the lumber industry on unused portions of federal parks on a basis whereby good forestry would be practiced.

Recommendation Status:

No action has been taken on this recommendation to date.

Recommendation Number VII
Maple Sugar Products

That the Nova Scotia Department of Lands and Forests continue with the establishment of a model sugar bush and processing plant; that this be supplemented by an information and education service directed to present and potential operators.

Recommendation Status:

The Nova Scotia Department of Lands and Forests in conjunction with the Agricultural Redevelopment Agency has completely modernized its processing facilities at the Giants Lake, Guysborough County model sugar bush area. Monies have also been spent in the last few years on access roads in the sugar bush area, and in the experimenting with new techniques. The area is used by the department as a demonstration area as commercial operators are invited to view the operation and apply these techniques to their own operations.

The following recommendations were not considered by the Voluntary Planning Board for inclusion in the First Plan:

1. Managing-Secretary for the Nova Scotia Forest Products Association

Whereas it is felt that much benefit would result to the lumber industry through a strengthening of the Nova Scotia Forest Products Association, it is therefore recommended:

that a permanent managing-secretary for this Association be employed with the idea that initially

the Provincial Government should support the Association by making monies available for his employment, after a mutually satisfactory period of time and if the venture proved to be successful the Association would take over the full cost of this man's services.

that the Government assist with the organization and operation of a (Wooden Container) Trade Association (under the auspices of the Nova Scotia Forest Products Association) whose primary aims should be:

A. to create a stronger unified voice to represent and defend the industry's interests in all related areas;

B. to initiate and co-ordinate product research, development and promotion;

C. to conduct market surveys in both domestic and export fields.

that a suitable representative trade organization be established (under the Nova Scotia Forest Products Association) with government assistance through which unified action may be taken on the problems of product standardization and promotion (in the sash, door and planing industry).

2. Specialty Wood Products

That Government assistance be requested in the promotion and marketing of these products; that market studies be conducted to determine present and future market potential.

3. Separate Ministry for the Department of Lands and Forests

In view of the economic importance of the forestry industry to the province and also in view of the heavy burden now imposed on our present Minister of Lands and Forests, it is recommended that the Minister of Lands and Forests hold only that portfolio.

4. Roundwood Exports

Whereas the Forestry Sector Committee regards it as highly desirable that wood cut in the forests of Nova Scotia be processed in Nova Scotia to the greatest extent possible;

And whereas the uncontrolled export of roundwood and raw wood fibre from the province may prevent the attainment of such object;

The Forestry Sector Committee recommends that the Government of Nova Scotia give consideration to enacting or procuring the enactment of such legislation as will enable the export of roundwood and raw wood fibre from the province to be controlled and limited to such quantities and species and from such district or districts as shall be determined from time to time by the Government of the province of Nova Scotia.

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Table A-1. Forest Production, Nova Scotia, 1947 to 1964-65

Year	Sawlogs and Bolts	Pulpwood	Fuelwood	Other Products(1)	Totals	% Year to Year Change
	Thousands of Cubic Feet					
1947(2)	89,984	22,684	19,739	7,324	139,731	- 9.9
1948	77,880	23,374	18,111	6,558	125,923	-17.2
1949	65,201	15,281	16,508	7,261	104,251	+12.0
1950	79,315	18,929	14,035	4,468	116,747	+10.8
1951	72,856	33,140	11,550	11,840	129,386	- 8.8
1952	69,320	28,920	11,075	8,613	117,928	- 8.3
1953	67,862	22,354	10,560	7,320	108,096	- 8.2
1954	57,606	27,222	9,840	6,754	101,422	+16.9
1955	75,046	30,094	8,673	4,775	118,588	- 6.3
1956	64,060	30,365	8,820	7,967	111,202	- 5.7
1957	58,191	32,681	8,797	5,180	104,859	-20.6
1958	47,840	23,024	7,992	4,427	83,283	+ 7.6
1959	52,509	24,482	8,000	4,621	89,612	+ 9.5
1960	58,109	25,904	10,000	4,082	98,095	- 1.4
1961	47,406	33,730	13,972	1,639	96,747	-15.3
1962	38,837	29,579	12,471	1,020	81,907	
1961-62(3)	47,519	33,855	13,945	642*	94,703**	-14.0
1962-63	38,949	30,035	12,058	652*	81,402**	+ 2.6
1963-64	38,200	33,556	11,023	307*	83,503**	+23.0
1964-65	42,572	47,661	11,340	1,126	102,700	

* Poles and piling only

** Does not include production from federal crown lands.

(1) Includes poles and piling, mining timber, fence posts, railway ties, etc.
(2) DBS 25-201, various issues
(3) Survey of Primary Production, Nova Scotia Department of Lands and Forests, various issues.

Table A-2. Pulpwood Disposal, Nova Scotia

Year	Local Consumption ('000 cu. ft.)	± % Year to Year Change	Export ('000 cu. ft.)	± % Year to Year Change	Total Pulpwood Production ('000 cu. ft.)	% Export To Total
1950	15,772.8		2,624.9		18,397.7	14.3
1951	N.A.	-	N.A.	-	N.A.	
1952	24,697.0	-	8,720.4	-	33,417.4	26.0
1953	16,765.0	-32.1	2,589.1	- 70.3	19,314.1	13.4
1954	24,415.7	+45.6	2,946.2	+ 13.8	27,361.9	10.8
1955	21,953.9	-10.1	9,454.9	+220.9	31,408.8	30.1
1956	18,714.1	-14.8	11,101.0	+ 17.4	29,815.1	37.2
1957	24,800.2	+21.2	10,214.5	- 8.0	35,014.7	29.2
1958	14,386.9	-42.0	7,236.6	- 29.2	21,622.5	33.5
1959	20,121.9	+39.9	4,021.9	- 44.4	25,143.8	16.0
1960	21,199.0	+ 5.4	4,977.5	+ 2.4	26,176.5	19.0
1961	23,787.8	+12.2	12,132.3	+143.7	36,920.1	33.8
1962	26,651.2	+12.0	12,602.2	+ 3.8	39,253.4	32.1
1963	29,075.1	+ 9.1	9,431.1	- 25.2	38,506.2	24.5

Sources: Annual Reports, Nova Scotia Department of Lands and Forests

Notes: Data as presented in annual reports are given in board feet. These were converted to cubic feet by the factor of 170 per thousand board feet for local consumption and 180 per thousand board feet for export.

Table A-3. Employment, Logging, Nova Scotia

Year	Computed Man-Years Employment[1]
1947	4,201
1948	3,831
1949	3,161
1950	3,447
1951	4,035
1952	3,629
1953	3,275
1954	3,159
1955	3,583
1956	3,451
1957	3,285
1958	2,586
1959	2,768
1960	3,021
1961	3,120
1962	2,660
1961-62	3,092
1962-63	2,651
1963-64	2,715
1964-65	3,422

Month	1962	1963	1964	1965
	Average Number Employed			
January	881	730	828	785
February	871	793	879	833
March	743	747	840	743
April	508	435	603	585
May	907	619	1,069	736
June	988	902	1,121	865
July	867	1,062	1,147	800
August	783	978	1,039	796
September	822	882	1,018	812
October	844	942	1,039	696
November	768	881	837	723
December	706	747	746	665

Note: The survey covers only those establishments employing 15 or more people. This feature influences the above monthly and yearly coverage.

Source: Employment and Payroll Division, DBS. Data on 1961 Standard Industrial Classification and Establishment Concept basis.

[1] Computed using a productivity figure of one and one-half cords per man-day and 1,000 board feet per man-day for those products cut in cords and logs respectively, and applied to production data given in Table A-1. Man-days of employment were converted to man-years by a factor of 200.

Table A-4. Value Added by Manufacture, Logging, Nova Scotia

Year	A Total Production[1] (M. cu. ft.)	B Farm Woodlot Production[1] (M. cu. ft.)	A - B Commercial Production (M. cu. ft.)	Value Added[2] ($ '000)	C Value Added/M cu. ft. ($)	A x C Total Value Added ($ '000)
1947	139,731	52,090	87,641	12,879	147.0	20,540
1948	125,923	46,909	79,014	12,358	156.4	16,694
1949	104,251	42,024	62,227	9,840	158.1	16,482
1950	116,747	37,990	78,757	13,496	171.4	20,010
1951	129,386	39,327	90,059	18,288	203.1	26,278
1952	117,928	38,196	79,732	16,592	208.1	24,541
1953	108,096	34,550	73,546	14,150	142.4	20,798
1954	101,422	33,998	67,424	13,613	201.9	20,477
1955	118,588	36,193	82,395	16,052	194.8	23,101
1956	111,202	35,297	75,905	16,164	213.0	23,686
1957	104,859	34,016	70,843	14,610	206.2	21,622
1958	83,283	27,017	56,266	12,656	224.9	18,730
1959	89,612	26,681	62,931	12,306	196.5	17,519
1960	98,096	22,122	75,973	15,409	202.8	19,894
1961	96,747	29,416	67,331	11,575	171.9	16,621
1962	81,907	22,193	59,714	12,099	202.6	16,594
1963	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
1964	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

Source: (1) DBS 25-201, various issues.
(2) DBS 61-202, 1962 issue, for "commercial" production only.

Note: Value added by manufacture data for logging and for the forest industries in following tables are in current dollars.

Table A-5. Employment, Pulp and Paper Industry, Nova Scotia

(Average Number Employed)

Year	DBS 36-204[1]
1947	973
1948	1,090
1949	1,029
1950	1,051
1951	1,143
1952	1,156
1953	1,197
1954	1,192
1955	1,215
1956	1,238
1957	1,254
1958	1,227
1959	1,235
1960	1,244
1961	1,198
1962	1,764
1963	1,591
1964	N.A.

	DBS, Employment and Payroll Division Data[2]			
Month	1962	1963	1964	1965
January	982	1,440	1,625	1,591
February	1,045	1,193	1,640	1,559
March	1,068	1,455	1,756	1,599
April	1,102	1,368	1,647	1,588
May	1,090	1,525	1,808	1,645
June	1,106	1,519	1,742	1,680
July	1,125	1,586	1,741	1,686
August	1,604	1,638	1,836	1,671
September	1,575	1,538	1,816	1,662
October	1,543	1,780	1,673	1,639
November	1,659	1,606	1,785	1,529
December	1,508	1,735	1,650	1,530
Totals	15,407	18,373	19,719	19,299
Average	1,284	1,531	1,643	1,608
Range	982 - 1,659	1,193 - 1,780	1,625 - 1,830	1,529 - 1,686

(1) Data adjusted to Total activity concept.

(2) On 1961 Standard Industrial Classification and Establishment concept basis.

Table A-6. Value Added by Manufacture and Indicated Productivity, Pulp and Paper Industry, Nova Scotia

Year	Value Added[1] ($ '000)	± % Year to Year Change	Employment[1] (Average Number)	± % Year to Year Change	Value Added/Employee ($)	Index (1947 = 100)
1947	6,719		973		6,905	100.0
1948	7,727	+ 15.0	1,090	+ 10.7	7,089	102.7
1949	7,192	- 6.9	1,029	- 5.6	6,989	101.2
1950	8,745	+ 21.6	1,051	+ 2.1	8,321	120.5
1951	10,828	+ 23.8	1,143	+ 8.8	9,473	137.2
1952	11,133	+ 2.8	1,156	+ 1.1	9,631	139.5
1953	10,570	- 5.0	1,197	+ 3.5	10,570	153.1
1954	11,820	+ 11.8	1,192	- 0.4	9,916	143.6
1955	12,114	+ 2.5	1,215	+ 1.9	9,970	144.8
1956	11,989	- 1.0	1,238	+ 1.9	9,684	142.8
1957	11,836	- 1.3	1,254	+ 1.3	9,438	136.7
1958	11,670	- 1.4	1,227	- 2.2	9,511	137.7
1959	11,696	+ 0.2	1,235	+ 0.6	9,470	137.1
1960	11,046	- 5.5	1,244	+ 0.7	8,879	128.6
1961	11,607	+ 5.1	1,198	- 3.7	9,689	140.3
1962	13,989	+ 20.5	1,764	+ 47.2	7,930	114.8
1963	17,112	+ 22.3	1,591	- 9.8	10,755	155.8
1964	N.A.		N.A.		N.A.	N.A.

Source: DBS 36-204, various issues.

(1) Data adjusted to total activity basis.

Table A-7. Number of Sawmills and Lumber Production, Nova Scotia

	Number of Mills				Lumber Production					
	D.B.S. 35-204[1]			Nova Scotia Dept.[2] of	Dominion Bureau of Statistics			Nova Scotia Department of Lands & Forests		
Year	S.I.C.	S.I.C. & E.C.	T.A.	Lands & Forests	Softwood	Hardwood	Total	Softwood	Hardwood	Total
1947	652				357,132	30,864	387,996	N.A.	N.A.	N.A.
1948	610				287,570	31,833	319,403	N.A.	N.A.	N.A.
1949	598				239,188	23,725	262,963	N.A.	N.A.	N.A.
1950	600				256,474	24,739	281,213	N.A.	N.A.	N.A.
1951	594				310,832	21,074	331,916	N.A.	N.A.	N.A.
1952	675				274,621	22,294	296,915	290,764	22,189	312,953
1953	732				272,668	23,200	295,868	284,738	20,634	305,372
1954	667				254,786	18,797	273,583	248,204	11,060	259,264
1955	643			794	339,817	13,865	353,682	350,063	8,029	358,092
1956	582			808	269,230	16,406	285,636	279,461	10,304	289,765
1957	523	345		681	241,544	14,181	255,725	245,076	11,778	256,854
1958	466	298		641	185,663	12,858	198,321	197,746	9,324	207,070
1959	483	312		627	211,059	9,483	220,542	229,325	9,001	238,326
1960	462	295		558	222,332	9,722	232,054	256,288	10,660	266,948
1961		264	261	509	133,599	6,072	139,671[3]	222,089	8,347	230,436
1962			258	488	146,768	5,677	152,445[3]	209,524	8,785	218,309
1963			N.A.	473	N.A.	N.A.	N.A.	222,090	10,205	232,385
1964			N.A.	441	N.A.	N.A.	N.A.	222,506	9,553	232,095

(1) - (a) DBS data omits mills cutting less than 100,000 bd. ft. of lumber per year. The employment of the establishment concept in 1961 also eliminated certain sawmills that were formerly covered and with the development of the total activity concept in 1962, further minor adjustments in sawmill statistical data were made.

(b) DBS definition of sawmills includes establishments primarily engaged in sawing rough lumber, ties, spool wood, lath and other mill products such as cooperage stock and box shooks from round wood. Mills that dress rough lumber on the sawmill premises are also included.

(2) Nova Scotia Department of Lands and Forests data include all sawmills regardless of production and include boxwood manufacturers as well as those engaged in sawing rough lumber.

(3) Lumber shipments.

Table A-8. Per Cent Distribution of Sawmills by Production Size Class,

Nova Scotia

Annual Production (M.F.b.m.)	1955	1956	1957	1958	1959	1960	1961		1962		1963		1964	
							%	Prod.(1)	%	Prod.(1)	%	Prod.(1)	%	Prod.(1)
6,000 +	1.0	1.0	1.2	0.5	0.5	0.5	0.4	(6.6)	0.6	(13.2)	0.8	(16.2)	0.9	(16.7)
3,000 to 5,999	1.8	1.2	1.0	0.9	1.1	1.1	1.8	(13.1)	1.4	(11.0)	1.0	(10.0)	2.3	(15.2)
2,000 to 2,999	3.1	2.5	2.9	2.2	3.8	3.4	3.3	(17.0)	3.1	(16.6)	3.4	(15.6)	3.6	(16.5)
1,500 to 1,999	4.3	3.7	3.1	1.6	3.2	3.9	3.5	(12.8)	2.9	(10.7)	3.2	(10.8)	2.5	(8.1)
1,000 to 1,499	8.1	5.7	6.6	5.3	4.8	5.4	5.3	(13.9)	3.9	(10.4)	7.2	(17.2)	6.1	(13.6)
500 to 999	11.1	12.1	13.0	12.0	10.4	12.5	10.0	(16.1)	11.3	(17.4)	9.3	(13.3)	9.1	(13.1)
400 to 499	4.5	4.0	4.4	2.8	5.6	3.0	3.9	(3.8)	4.1	(3.9)	3.8	(3.4)	5.9	(4.9)
300 to 399	4.8	4.1	4.0	4.2	4.6	5.6	5.5	(4.2)	7.2	(5.3)	4.9	(3.3)	4.5	(3.0)
200 to 299	6.8	5.8	8.4	8.5	7.5	6.6	9.0	(5.0)	6.1	(3.4)	6.6	(3.4)	5.4	(2.5)
100 to 199	13.7	13.1	11.7	15.6	12.8	11.3	11.2	(3.4)	12.3	(3.8)	12.9	(3.6)	12.0	(3.2)
Less than 100	40.8	46.8	43.6	46.3	45.8	46.6	46.0	(4.1)	47.1	(4.3)	46.9	(3.2)	47.7	(3.2)

1. Production is total for class in millions of board feet.

Source: Nova Scotia Department of Lands and Forests, Extension Notes Numbers 21 and 28.

Table A-9. Employment, Value Added by Manufacture and Indicated Productivity,

Sawmilling Industry, Nova Scotia

Year	Employment[1] (Average Number)	Value Added by Manufacture[1] ($ '000)	Indicated Productivity ($ per Employee)	Index (1947 = 100)
1947	2,567	7,205	2,807	100.0
1948	2,273	6,016	2,647	94.3
1949	1,867	5,274	2,825	100.6
1950	1,998	5,962	2,984	106.3
1951	2,127	7,448	3,502	124.8
1952	2,124	7,785	3,665	130.6
1953	2,084	7,142	3,427	122.0
1954	1,813	6,601	3,641	129.7
1955	2,085	8,090	3,880	138.2
1956	1,690	6,882	4,072	145.1
1957	1,551	5,689	3,668	130.7
1958	1,326	4,581	3,455	123.1
1959	1,378	5,126	3,720	132.5
1960	1,444	5,058	3,503	124.8
1961	1,174	4,921	4,191	149.3
1962	1,307	6,265	4,793	170.7
1963	N.A.	N.A.	N.A.	N.A.
1964	N.A.	N.A.	N.A.	N.A.

1. Data adjusted to total activity concept.

Source: DBS 35-204, various issues.

Table A-10. Establishments, Employees and Value Added by Manufacture, Other Wood-Using Industries,[1] Nova Scotia

Year	Establishments[2] (Number)	Employees[2] (Average Number Employed)	Value Added by Manufacture[2] ($ '000)
1947	109	1290	2,020
1948	106	1310	2,170
1949	120	1620	3,180
1950	113	1530	3,340
1951	113	1490	3,350
1952	96	1570	3,340
1953	99	1370	3,960
1954	103	1250	3,660
1955	101	1260	3,580
1956	96	1320	3,950
1957	94	1280	3,660
1958	81	1110	4,830
1959	77	1040	4,000
1960	79	900	3,850
1961	78	980	3,960
1962	81	940	3,740
1963	N.A.	N.A.	N.A.
1964	N.A.	N.A.	N.A.

1. Includes sash, door and planing mills, wooden box factories, cooperage mills, speciality and miscellaneous wood industries. Wooden furniture and boat building industries included as a part of secondary manufacturing sector.

2. Data adjusted to total activity concept basis.

Source: DBS 31-204, Various issues.

Table A-11. Value Added by Manufacture Targets, Logging and Forest Industries,

Nova Scotia

Year	Pulp and Paper Value ($'000)	Δ%	Sawmilling Value ($'000)	Δ%	Other Wood Using Value ($'000)	Δ%	Logging[1] Value ($'000)	Δ%	Totals Value ($'000)	Δ%
					Historical					
1960	11,046		5,058		3,850		19,894		39,808	
1961	11,607	+ 5.1	4,921	- 2.7	3,960	+ 2.8	16,631	-16.4	37,119	- 6.8
1962	13,989	+20.5	6,265	+27.3	3,740	- 5.6	16,594	- 2.2	40,588	+ 9.3
1963	17,112	+18.2	6,000 (est)	- 4.2	3,850 (est)	- 2.8	12,100 (est)	-27.1	39,062	- 3.8
1964	20,000 (est)	+16.7	6,000 (est)	0.0	3,850 (est)	0.0	14,600 (est)	+20.6	44,450	+13.8
Short Range to 1968					Projections					
1965	21,000	+ 5.0	6,100	+ 1.7	3,950	+ 2.6	14,800	+ 1.4	45,850	+ 3.1
1966	22,000	+ 4.8	6,250	+ 2.4	4,000	+ 1.3	15,500	+ 4.7	47,750	+ 4.1
1967	25,000	+13.6	6,350	+ 1.6	5,000	+25.0	19,200	+23.9	55,550	+16.3
1968	32,000	+28.0	6,500	+ 2.4	5,100	+ 2.0	20,800	+ 8.3	64,400	+15.9
		(+72.4)		(+ 8.3)		(+32.4)		(+55.8)		(+37.7)
Medium Range to 1972										
1972	34,000	(+83.2)	7,000	(+16.7)	5,500	(+42.8)	25,300	(+89.5)	71,800	(+53.6)

[1]. Logging includes farm woodlot production.

Δ% is change over previous year.

(Δ%) is change over 1963-64 base years.

Table A-12. Employment Targets, Logging and Forest Industries,

Nova Scotia

Year	Pulp and Paper Number	Δ%	Sawmilling Number	Δ%	Other Wood Using Number	Δ%	Totals, Forest Ind. Number	Δ%	Logging Man-Years	Δ%
				Historical						
1960	1,244		1,444		900		3,588		3,100	
1961	1,198	- 3.7	1,174	-18.7	980	+ 8.9	3,352	- 6.6	2,700	-12.9
1962	1,764	+47.2	1,307	+11.3	940	- 4.1	4,011	+19.6	2,600	- 3.7
1963	1,591	- 9.8	1,250 (est)	- 4.4	900 (est)	- 4.2	3,741	- 6.7	2,600	0.0
1964	1,640	+ 3.1	1,250 (est)	0.0	900 (est)	0.0	3,790	+ 1.3	3,100	+19.2
				Projections						
Short Range to 1968										
1965	1,610	- 1.8	1,220	- 2.4	850	- 5.6	3,680	- 2.9	3,000	- 3.2
1966	1,900	+18.0	1,190	- 2.4	800	- 5.9	3,890	+ 5.7	3,200	+ 6.7
1967	2,050	+ 7.9	1,160	- 2.5	950	+18.8	4,160	+ 6.9	3,300	+ 3.1
1968	2,300	+12.2	1,120	- 3.4	1,000	+ 5.3	4,420	+ 6.2	3,200	- 3.0
		(+42.3)		(-10.4)		(+11.1)		(+17.4)		(+13.3)
Medium Range to 1972										
1972	2,350	(+45.4)	1,000	(-20.0)	1,100	(+22.2)	4,450	(+18.2)	2,600	(- 8.8)

Δ% is change over previous year.

(Δ%) is change over 1963-64 base.